

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Information Disclosure Statement**

In the Response to the Office Action filed March 25, 2004, Applicant respectfully noted that while page 1 of 2 of the PTO-1449 form filed on October 29, 2001 was initialed and returned, page 2 of 2 had not been received. Applicant respectfully requested that the Examiner forward an initialed copy of page 2 of the PTO-1449 form at the Examiner's earliest convenience. To date, the Examiner has not yet initialed and returned the PTO-1449 as requested. Applicant again requests that the Examiner forward this document with the next Action.

**Acknowledgement of Priority**

In the Response to the Office Action filed March 25, 2004, Applicant respectfully requested that the Examiner acknowledge the Applicant's claim for priority under 35 U.S.C. § 119 and receipt of priority documents. Applicant noted that priority documents were submitted on October 29, 2001. Acknowledgement of priority and receipt of priority documents was not made in the Office Action dated June 15, 2004. Applicant respectfully requests that this acknowledgement be made in the next Action.

**I. Disposition of Claims**

Claims 1-8 were pending in this application. Claims 9-20 were previously cancelled. Claim 1 has been amended by this reply. These amendments were made to more clearly recite the present invention. Claims 21 and 22 have been added by this reply. No new matter has been added by way of these amendments. Claims 1 and 22 are independent. The remaining claims depend, directly or indirectly, from claim 1.

**II. Rejection(s) under 35 U.S.C § 102**

Claims 1-5 and 8 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,537,648 ("Takahashi"). Claim 1 has been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

As recited in claim 1, the present invention relates to a molded glass substrate for a magnetic disk. The magnetic disk includes upper and lower principal surfaces, in addition to an outer surface and an inner surface. The upper and lower principal surfaces are formed by molding between precision planar processing members. The upper and lower principal surfaces have a characteristic corresponding to a surface of the molding die. The outer surface joins the upper and lower principal surfaces and the outer surface has a smoothness that corresponds to a glass material that does not converge on a mold face. The inner surface also joins the upper and lower principal surfaces and the inner surface defines a through-hole in a central portion of the substrate.

Further, an outer diameter of the magnetic disk has a dimensional tolerance in accordance with a predetermined volume of the glass material and the thickness of the

magnetic disk has a dimension and tolerance in accordance with a barrel die size. Additionally, the upper and lower principal surfaces have a small waviness  $W_a$  of no greater than 0.5 nm.

Takahashi does not disclose the claimed invention. Particularly, Takahashi does not disclose an outer surface that “has a smoothness corresponding to a glass material that does not converge on a mold face,” as recited in amended claim 1. Further, insofar as amended claim 1 is considered to have process limitations, as in a product-by-process claim, the structure of the present invention is substantially different from Takahashi.

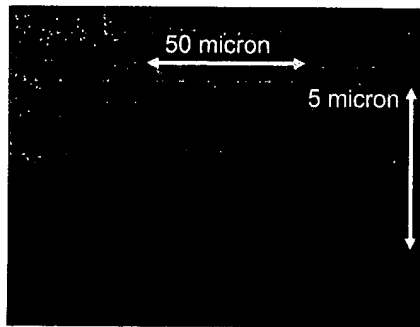
The Examiner sets forth the following standards for determining patentability of the present invention

- (1) When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the Applicant to present evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art (p. 3 of the Action).
- (2) The determination of patentability for a product-by-process is based on the product itself and not on the method of product (p. 4 of the Action).

**Comparative examples (at outer surface)**

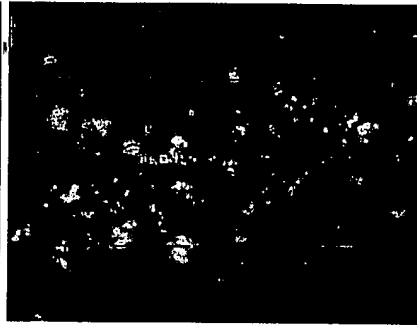
*measured by laser microscope*

substrate A  
(molding-free face)



Ra=0.047(micron)

substrate B  
(polished mirror surface)



Ra=0.256(micron)

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illustrate that there is a substantial structural difference between the “molding-free face” of the present invention and the polished mirror surface of the prior art at the outer surface. (An enlarged version of the comparative example is also attached for the Examiner’s convenience.)

In the comparative example, an outer surface of a magnetic disk having a “mold-free face” and an outer surface of a magnetic disk having a polished mirror surface were measured by a laser microscope. Qualitatively, the surface profile of the present invention is substantially flat, whereas the surface profile of the polished mirror surface is relatively irregular or rough. Quantitatively, the roughness (or smoothness) of the outer surface of the present invention is measured as 0.047 microns, whereas the roughness of the outer surface of the polished mirror surface is 0.256 microns. There is approximately an order of ten difference between the roughness measurements of the present invention and the prior art.

Further, the roughness of the outer surface of the present invention is substantially less, because this surface is formed to have “a smoothness corresponding to a glass material that does not converge on a mold face,” as recited in claim 1. Takahashi does not disclose this feature and this is evidenced by the substantial roughness of its outer surface.

Therefore, the product of the present invention has been shown to be substantially different from the product of the prior art. Furthermore, Takahashi does not disclose all of the features of the claim 1, namely, a “molding-free face.” As such, claim 1 is patentable over Takahashi. Dependent claims 2-8 and 21, in addition to independent claim 22, are patentable for at least the same reasons.

### **III. Rejection(s) under 35 U.S.C § 103**

Claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being obvious over Takahashi in view of U.S. Patent No. 3,660,061 (“Donley”). Claim 1, from which claims 6 and 7 depend, has been amended. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

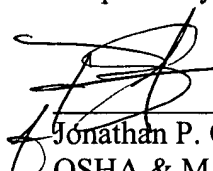
Takahashi fails to teach the present invention and Donley fails to provide that which Takahashi lacks. Donley has been provided to show “ground” and “fire” polishing. Donley is completely silent to a “molding-free face” as recited in amended claim 1. Because Donley fails to provide that which Takahashi lacks, claim 1 is patentable over Takahashi and Donley, whether considered separately or in combination. Dependent claims 2-8 and 21, in addition to independent claim 22, are patentable for at least the same reasons.

#### IV. Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 04558/053001).

Date: 9/9/04

Respectfully submitted,

  
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# Comparative examples (at outer surface)

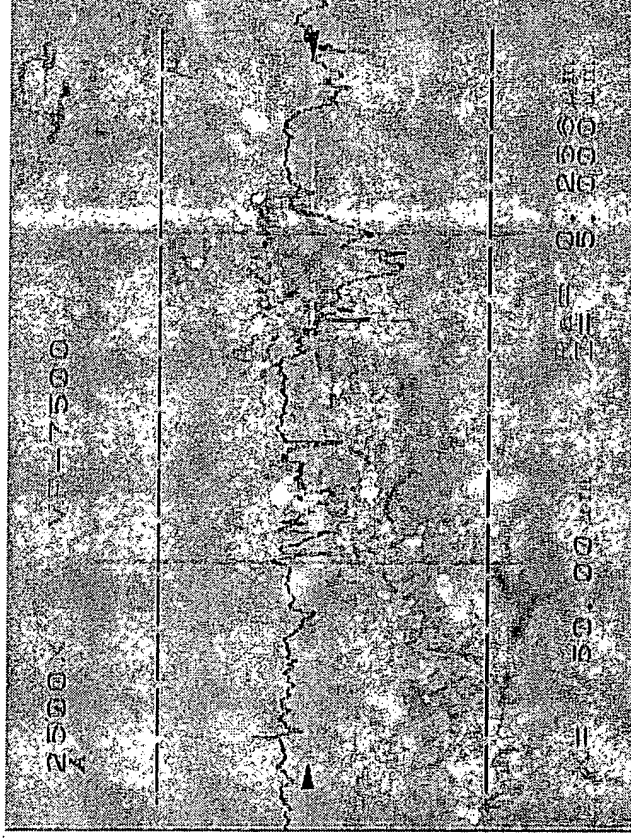
*measured by laser microscope*

substrate A  
(molding-free face)

substrate B  
(polished mirror surface)



Ra=0.047(micron)



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